Electronic Version
Stylesheet Version v1.1.1

Claims

[c1] 1. A device for monitoring a patient"s blood pressure, comprising:
an optical module comprising an optical source component and a first optical sensor that generates a first set of information;
a flexible, thin-film pressure sensor that generates a second set of information; and
a processing module, configured to receive the first and second sets of information and comprising a processor that processes this information to calculate a blood pressure value.

[c2] 2. The device of claim 1, wherein the flexible, thin-film pressure sensor is a sensor that generates the second set of information in response to an applied force or pressure.

[c3] 3. The device of claim 2, wherein the flexible, thin-film pressure sensor comprises a sensing material featuring an electrical resistance that varies with an applied force or pressure.

[c4] 4. The device of claim 3, wherein the flexible, thin-film

pressure sensor is configured to generate a time-dependent pressure waveform that varies in response to an applied force or pressure.

[c5] 5. The device of claim 1, wherein the processing module further comprises an analog-to-digital converter.

[c6] 6. The device of claim 5, wherein the flexible, thin-film pressure sensor is in electrical contact with the analog-to-digital converter.

[c7] 7. The device of claim 1, wherein the optical module further comprises a first optical source that generates visible radiation, and a second optical source that generates infrared radiation.

[c8] 8. The device of claim 1, wherein the optical sensor is a photodiode.

[c9] 9. The device of claim 8, wherein the photodiode is configured to generate a photocurrent after detecting radiation generated by the first and second optical sources.

[c10] 10. The device of claim 9, wherein the processing module further comprises an analog-to-digital converter configured to receive and process the photocurrent.

[c11] 11. The device of claim 9, wherein the processing module comprises firmware that processes the photocurrent

to generate a time-dependent optical waveform.

[c12] 12. The device of claim 1, wherein the processor comprises computer-readable firmware that processes the first and second sets of information to determine a systolic and diastolic blood pressure.

[c13] 13. The device of claim 12, wherein the processor further comprises computer-readable firmware that processes the first and second sets of information to determine a time-dependent blood pressure.

[c14] 14. The device of claim 12, wherein the processor further comprises computer-readable firmware that processes the first set of information to additionally determine pulse oximetry and heart rate.

[c15] 15. The device of claim 1, further comprising an adjustable band configured to attach to a user"s wrist.

[c16] 16. The device of claim 15, wherein the adjustable band comprises the flexible, thin-film pressure sensor.

[c17] 17. The device of claim 1, further comprising a finger-worn component that comprises the optical module.

[c18] 18. The device of claim 1, further comprising a serial interface.

[c19] 19. The device of claim 18, wherein the serial interface is configured to send information to an external device.

[c20] 20. The device of claim 18, wherein the serial interface is configured to accept calibration information.